Nootkatone Now Registered by EPA

For Release: August 10, 2020

A new active ingredient, discovered and developed by the Centers for Disease Control and Prevention (CDC), has been registered by the Environmental Protection Agency (EPA) for use in insecticides and insect repellents.

Studies show that when products are formulated from the new ingredient, nootkatone, they may repel and kill ticks, mosquitoes, and a wide variety of other biting pests. Nootkatone is responsible for the characteristic smell and taste of grapefruit and is widely used in the fragrance industry to make perfumes and colognes. It is found in minute quantities in Alaska yellow cedar trees and grapefruit skin.

Nootkatone can now be used to develop new insect repellents and insecticides for protecting people and pets. CDC's licensed partner, Evolva, is in advanced discussions with leading pest control companies for possible commercial partnerships. Companies interested in developing brand name consumer products will be required to submit a registration package to EPA for review, and products could be commercially available as early as 2022.

"CDC is proud to have led the research and development of nootkatone," said Jay C. Butler, MD, Deputy Director for Infectious Diseases. "Providing new alternatives to existing bite-prevention methods paves the way to solving one of biggest challenges in preventing vector-borne diseases—preventing bites."

Studies show that when nootkatone is formulated into insect repellents, they may protect from bites at similar rates as products with other active ingredients already available and can provide up to several hours of protection.

Having a new effective ingredient for insecticide available will assist in addressing the growing levels of insecticide-resistance to other products currently in use, according to EPA.

"EPA is pleased to be continuing our partnership with CDC on registering nootkatone, which provides another tool to help protect the American public from biting insects and ticks," said Alexandra Dapolito Dunn, EPA Assistant Administrator for the Office of Chemical Safety and Pollution Prevention. "This new active ingredient has the potential to be used in future insect repellents and pesticides that will protect people

from disease. In many areas of the United States, mosquitoes have become resistant to currently available pesticides. A new active ingredient in our toolbox will help vector-control programs."

Mosquito- and tickborne diseases are a growing threat in every U.S. state and territory. The number of reported cases of mosquito- and tickborne diseases doubled from 2004 to 2018. Tickborne diseases represent almost 8 in 10 of all reported vector-borne disease cases in the U.S. Increasing risk from these diseases means increasing demands on federal, state, and local health departments and vector control agencies.

CDC has partnered with Evolva since 2014. In 2017, Evolva was awarded a Biomedical Advanced Research and Development Authority (BARDA) contract with the key objective of advancing the development of nootkatone and nootkatone-based products for protection against mosquito-borne diseases, including dengue and Zika. This work has been supported with federal funds from CDC and managed by the Office of the Assistant Secretary for Preparedness and Response (ASPR), BARDA, under Contract No. HHSO100201700015C.

LAST UPDATED ON AUGUST 10, 2020